



# **Daffodil** *International* **University**

**Faculty of Engineering**  
**Department of Textile Engineering**  
A Report on  
Investigation of wash defect on Knit Garments

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**Course Title: Thesis**

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This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Textile Engineering.

**ADVANCE IN APPAREL MANUFACTURING TECHNOLOGY**

**August, 2019**

# Faculty of Engineering

## Department of Textile Engineering

### Approval Sheet

We hereby declare that, This Project Report title as “Report on **Investigation of wash defect on Knit Garments** at” has been prepared by the students **Khokan Chandra sing, ID: 153-23-202, Md. Anawer Hossan, ID: 163-23-251, Monoarul Islam, ID: 143-23-4066** are completed for final evaluation. The whole report is prepared based on the proper investigation and interruption through critical analysis of empirical data with required belongings. The student were directly involved in their project activities and the report become vital to spark of many valuable information for the readers.

Therefore it will highly be appreciated if you kindly accept this project report and consider it for final evaluation.

**Supervised by**  
**Sharmin Akhter**  
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**Signature: .....**

# Acknowledgement

At first we thanks to god for donating our with health, patience, and knowledge to complete this task. We would like to express our special appreciation and cordial thanks to many people who are helped us a lot for preparing this Project (Thesis). Their guideline, advice and suggestions helped us a lot. At first, we would like to thanks our Supervisor Sharmin Akhtar lecturer the department of textile engineering, Daffodil international University; you have been a fabulous mentor for us. We would like to thank you for encouraging us. Your advice on this report will be the path of our career.

Finally, we met acknowledge with due respect the constant support and patients of our parents.

## **Declaration**

We hereby declare that, the project has been done by us under the supervision of “Sharmin Akter”, Lecturer, Department of Textile Engineering, Faculty of Engineering, Daffodil International University. We also declare that, neither this project nor any part of this project has been submitted elsewhere.

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## **Dedication**

With the profound feeling of respect to our cherished and dearest guardians, Teachers and all other the individuals who gave their yesterday for our effective and surprise today.

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## Abstract

Bangladesh's export revenue carries more than 80% contribution from the Textile and Apparel industries. The now-a-days textile field becomes very competitive & the buyer wants 100% quality product. For this reason, it is very important to know about the latest technologies in the textile sector. To produce a quality product as a textile engineer we must have a vast knowledge about the production parameters & how to produce a high quality product. We have observed that. **Magpie Composite Textile Ltd.** produces high-quality fabric and fulfill the special requirements of the different types of buyers by following different internationally recommended standard method. We learn about washing and different types of defect on knit garments also analysis washing effects on knit garments. Where washing defects 0.834% and rejected 0.094%.





# Chapter -01

## Introduction

### 1.1 Background of the study

The first step of a student in professional life is project, especially in technical side. A practically running processing technology of an industrial unit is an essential part of study for a student. In our university, processing machines are not continuous in running condition, so it would only provide demonstration of mechanical features & processing technology of the material in accomplishment of the theory but not of the situational variables to achieve practical knowledge. It is essential to keep up a degree of value for each industry or business to show signs of improvement name among buyers and individual organizations. Particularly for the business occupied with fare business needs to continue an abnormal state of value to guarantee better business all inclusive. Organizations who are into fare business hold the esteem of the nation, and because of this for the most part quality control measures for fare are set carefully. It ends up obligatory to have great quality control of their items as fare houses win remote trade for the nation. In the piece of clothing industry quality control is rehearsed directly from the underlying phase of sourcing crude materials to the phase of last completed article of clothing.

A postulation paper is known as an examination paper that gives adequate data about specific subjects. My proposition paper contains "Worth Addition of Washing."

- We have interest in garments wash.
- Garments has fewer difficulties in process as compare to other dyeing process.
- We will try to optimize the process and try to invent new washes or finishes in knit garments.
- We think it will have high demand in the future and this is also the point of our attraction for this topic.

## 1.2 Objectives of the study

- To create wash, look appearance, seems the new touch of fashion.
- Faded/old, color and tinted affect by the washing technique.
- Technique of Washing such as tagging, grinding, destroy, blasting, permanent wrinkle, deep dye, tie dye, pp. spray, hand crapping, etc. Creates new fashion.
- The garments soft hand feels.
- Any dirt, spot or germ if added in the garments during manufacturing is also removed due to washing.
- To attraction the customers/buyer by different types of fashionable washing and market development.
- After washing there is no possibility of further shrinkage of the wash garments.

## 1.3 Importance of the Study

Every study has some significance. Some significance of this study is given below:

- We have gathered lot of practical knowledge about washing.
- Beside this I have learned about different types of washing and it's defects on knit garments.
- From this report we can decide which step should be taken or should not be taken on the basis of washing defects.
- It helps us to learn various types of washing.

## 1.4 Limitations of the study

During my thesis period we have faced some problem. Those are given below:

- We can't collect all data due to some restriction
- Without permission of higher authority, we can't bring some necessary papers.
- Some section still following old washing system.
- Time was also a limitation to learn more.
- Collecting information during working was a tough job.

# Chapter - 02

## Literature Review

### 2.1 Definition of washing

Normally washing mean cleaning something. The garment was a new technology in the garment trade. But in the garments trade, only cleaning of garments is not the garment wash. Garment washing is a technology which is applied to change or modify the outlook, appearance, comfortable, and design of garments.

### 2.2 Principal part of garments washing

- **Water (or other cleaning fluid):** The environmental impact depends on quantity and also how it is reused or disposed of.
- **Detergent:** Using less water achieves a greater concentration of detergent and thus less impact. The choice of detergent is also important.
- **Heat:** This can greatly increase cleaning effectiveness, but causes carbon emissions, unless using solar hot water, or water heated with renewable energy.
- **Time:** This is usually a matter of managing the process so that there is maximum time for dirt, grease etc. to dissolve, and has no environmental cost.
- **Physical motion:** (agitation or scrubbing).

Using more of one component can help reduce the amount used of the others. Allowing time to soak and dissolve is one of the most important tools in effective and low-impact cleaning, as it reduces the impact of the other components.

## 2.3 Causes of garments washing

- To create wash look appearance. After washing the garments create a new look which seems the new touch of fashion.
- By the washing procedure, blurred/old look, shading or tinted influence is made in the articles of clothing which likewise appear the best pinch of pieces of clothing.
- Washing technique creates new fashion such as Enzyme, Rubber, hot, softener silicon, acid wash, pp. spray, tie dye, deep dye etc. permanent wrinkle, deep dye, tie dye, P. P spray, hand crapping, P.P spoon zing etc.
- The main and important part of washing is to reduce size materials as a result the garments become size free and become soft hand feel.
- When this soft garments touched then it seems to best touch of garments.
- To fascination the clients or Buyer by various sorts of Fashionable washing and market advancements.
- Due to washing, shrinkage occurs in the garments. There is no possibility of further shrinkage of the wash garments.
- Any spot or germ whenever included the pieces of clothing during assembling is likewise evacuated because of washing.
- To remove the hairiness of garments to make it comfortable to wear.

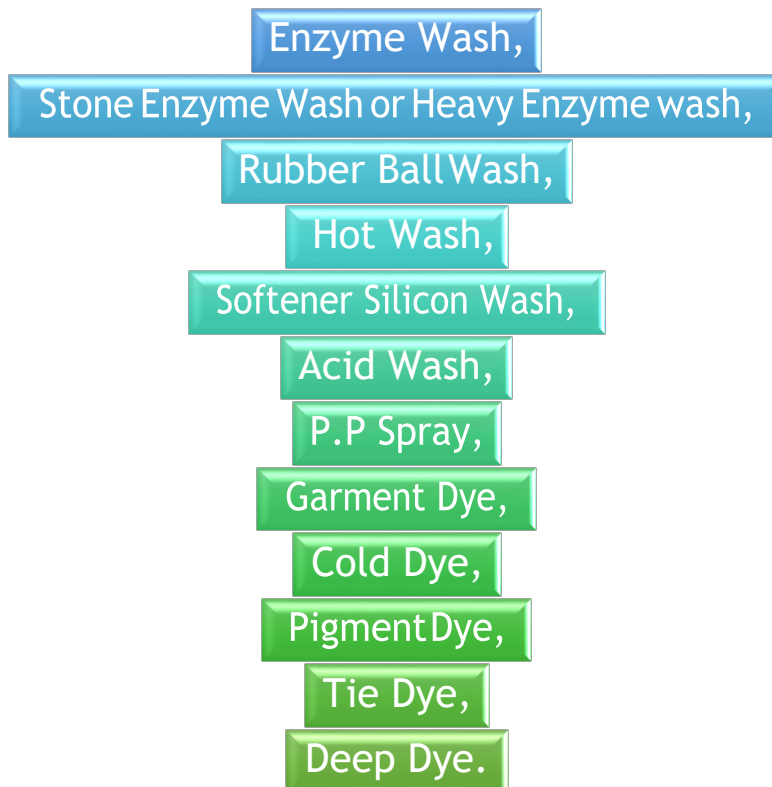
## 2.4 Qualities of washing

The expression "aftermath" alludes to articles of clothing that are inadmissible after piece of clothing washing. They might be filthy, recolored, stained, and conceivably torn. Numerous stains can be evacuated with rewashing. Most article of clothing washers will follow and gather these pieces of clothing and rewash them when they have enough pounds to meet the prerequisites of their gear. Ask your article of clothing washer about their fallout and rewash policies. Do they charge for rewash and if so, how much? Ask what their normal fallout percentage is. If it is over 2% you may want to consider alternative garment washers. Remember to cost fallout into your product's price.

Final inspection is another area that is handled differently by many garment washers. Some inspect for dirt and gross garment defects. Some will provide inspection services to meet your criteria. Be certain you understand how your production will be inspected, sorted, and packed, and as always, be aware of the costs involved. There are other services related to finishing that garment washers can provide. These include sorting (by size, color, etc.) Extraordinary bundling, hand squeezing, steam burrowing, hanging, and labeling. Your article of clothing washer may give different administrations that might be of an incentive to you. Approach your article of clothing washer for what you need and make sure to choose cost before starting creation. Last article of clothing measurements for piece of clothing colored or article of clothing washed items will be founded on foreordained "after procedure" principles. Because of the outcome of texture shrinkage inconstancy, joined with typical sewing resistances, the scope of variety will be fundamentally higher than articles of clothing sewn from piece-colored textures. Industry benchmarks of  $\pm 5\%$  texture shrinkage changeability show the procedure capacities of most texture factories. This inconstancy can be decreased by pretesting texture parts before cutting and changing examples for textures showing fluctuation. It is sensible to expect a general procedure capacity of  $\pm 3\%$ , which still is enough variance to cause minor grades to overlap a certain percentage of the time. Arbitrary "standards" cannot be accepted if they fall outside the process capability.

## 2.5 Types of knit garments washing

There are different types of wash, applied on the knit garments are pointed in the below:





**Those are discussed in the following:**

❖ **Enzyme Wash:**

Enzyme washing is also more ecologically friendly due to the natural origins of enzymes, which biodegrade rather than linger in the water supply. Enzyme wash main target to change the outlook of any knit garments, and its looks very nice.



1. Figure: Enzyme wash on knit garment.

❖ **Heavy enzyme wash or Stone enzyme Wash:**

Stone enzyme wash is the most important by the stone abrasion color effects on the garments. The technician must be taken some precaution to avoid the damage of the garments for this washing. For avoiding this case, it prefers to be used the very small stone. The main purpose of the wash to heavy abrasion produce on knit garments.



2. Figure: Stone wash on knit garment

❖ **Rubber Ball Wash:**

Rubber ball wash is a garments and softener wash. garments will softer and at a time seam abrasion will come. That time we will use this process when any knit garments needed more hand-fell with seam abrasion.



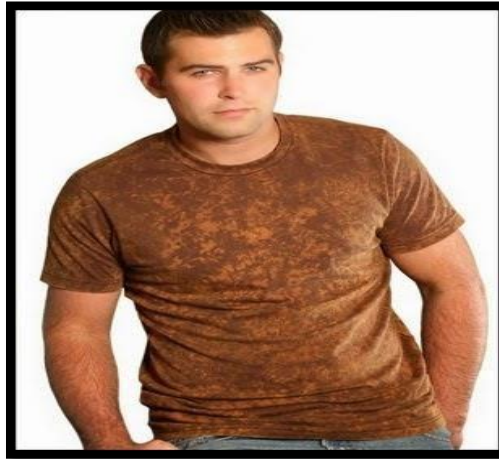
3. Figure: Rubber ball wash on knit garment

❖ **Hot Wash:**

To prevent the shrinkage problem after completing different treatment of that garments in knit fabrics used hot wash. To making any garments after hot wash. Before making any garments its mandatory process to complete fabric hot wash such as- cold dye, garment dye pp. spray etc.

❖ **Softener Silicon Wash:**

This wash used when the knit garments needed more hand-feel and softness and the same occasion. Both softener and silicone are used together. Where Silicone works softening the cellulose and surface slipper. Softener may be cationic or nonionic.



4. Figure: Silicon wash on knit garment

❖ **Acid Wash:**

This wash main target is to produce uneven look on knit garments. It is done by potash and stone. The stone dip in to the potash solution and slight dry the stone and wash in a washing machine. Finally get an uneven look on garments.



5. Figure: Acid wash on knit garment

#### ❖ P.P Spray:

In this wash potassium permanganate spray on the specific area of a garment. The chemical use to reduce the color from the knit garments to apply the chemical P.P gun is use by air pressure. Apply the scrapping area after after neutralize by sodium meta-bi-sulphite chemical in washing machine, a white look on the spray area will be achieved.

#### ❖ Garment Dye:

Garment dye is done by after making a garment. The main benefit of this garments dye to cost effectiveness of much producing identical garments of particular colors. And others advantage, it becomes softer and feels more vintage which is one of the important factors to satisfy the buyer.



6. Figure: Garment dye wash on knit garment

#### ❖ Cold Dye:

It is one kinds of garments dye and it is two types. One is “Inside cold dye” and another one is “Outside cold dye”. During cold dye process, buyer suggestion should be followed about inside/outside cold dye.



7. Figure: Cold dye wash on knit garment

### ❖ Pigment Dye:

It is also one kind of garment dye. Pigment dye used in knit garments to achieve the even shade. It's main difference between cold dye and pigment dye, in cold dye, knit garments will achieve uneven shade and in pigment dye, will achieve the even shade.



8. Figure: Pigment dye wash on knit garment

### ❖ Tie Dye:

Tie dye is one kind of garments dye which is applied on the knit garments for achieved uneven shade. In this dye some area of the garments absorbed dyes and some of the area did not absorb.



9. Figure: Tie dye wash on knit garment

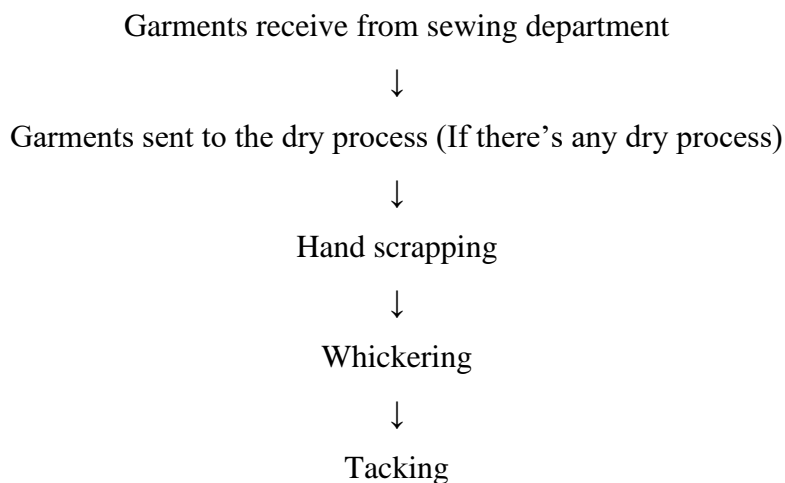
### ❖ Deep Dye:

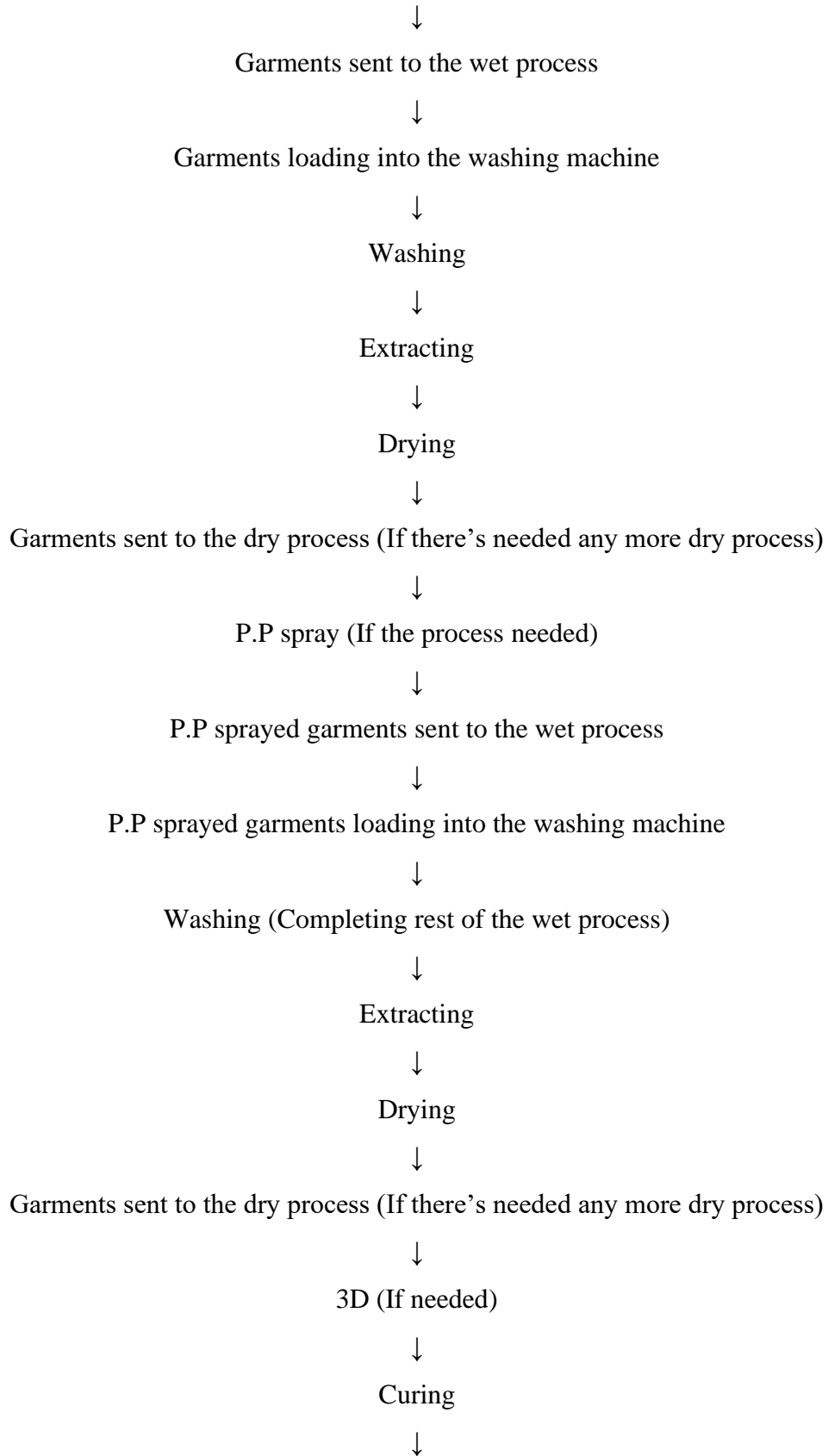
Deep dye is one kind of garments dye or also called uneven dyeing process. In this dry a knit garment will achieve various uneven shades in part by part. It's seen that, one area of the knit garments absorbed one color and another portion of that garments absorbed another color. For this type of dying process, reactive dyes are used due to good color fastness. The main target of this process is to achieve more than one color in same Knit garments.



10. Figure: Deep dye wash on knit garment

## 2.6 Flow chart of knit garments washing





Quality check (Q.C)



Send to the finishing department.

## 2.7 Garments Washing process and procedure:

- ✚ **Garments receive from sewing department** → Garments receive from sewing section.
- ✚ **Garments sent to the dry process** → Total garments are sent to the dry process section if the buyer acceptable wash reference garments dry process.
- ✚ **Hand scrapping** → Hand scrapping is done by buyer requirement wash in garments.
- ✚ **Whickering** → Whickering is done by buyer requirement wash in garments.
- ✚ **Tacking** → This effect flows up by buyer requirement if needed tacking process.
- ✚ **Garments sent to the wet process** → After finessing all the buyer required dry process then the garments sent the wet process.
- ✚ **Garments loading into the washing machine** → For the required wash the garments are loaded into the washing machine.
- ✚ **Washing** → By buyer requirement garments are washed with using chemical.
- ✚ **Extracting** → After complete the wash then the garments are unloaded from the washing machine and using hydro extractor.
- ✚ **Drying** → Here the garments are dried by steam dryer and which are depended on the shade.



- ✚ **Garments sent to the dry process** → All the garments are sent to the dry process for completing P.P process and buyer approved wash reference garment contains this process.
- ✚ **P.P spray** → Here P.P spray ought to be finished utilizing required substance by following purchaser endorsed wash reference.
- ✚ **P.P sprayed garments sent to the wet process** → Completing P.P spray, garments are sent to the wet process for completing rest of the wet processes such as P.P neutral, Tinting and Softening.
- ✚ **P.P sprayed garments loading into the washing machine** → Garments are loaded into the washing machine.
- ✚ **Washing** → When neutral, Tinting and softening is done here by following buyer approved wash reference garment.
- ✚ **Extracting** → When wash complete then unloaded garments from the machine and using hydro extractor.
- ✚ **Drying** → The garments are dried by steam dryer and which are totally depended on the shade.
- ✚ **Garments sent to the dry process** → If the buyer approved wash reference garment contains 3D process then these garments should be sent again to the dry process for completing 3D.
- ✚ **3D** → 3D process is completed by using buyer instruction.
- ✚ **Curing** → Applied 3D process, garments are cured here by using woven machine.

- ✚ **Quality check (Q.C)** →After finishing the all step then the garments are checked.
- ✚ **Send to the finishing department** →Finally all the garments are delivery the finishing section for the next process.

## 2.8 Machine used in washing plant

No:	Name:
01	Sample washing machine (Horizontal or vertical)
02	Washing machine (Front Loading)
03	Washing machine (Side loading)
04	Chemical mixture machine
05	Dryer machine (Steam or gas)
06	Hydro extractor machine
07	Industrial oven (Gas or electric)
08	Boiler
09	Submersible pump
10	Steam chamber for crinkle
11	Sand blasting Gun
12	Spray gun and dummy

13	Sand blasting chamber
14	Screw compressor
15	Generator
16	Tagging machine
17	Laser draw
18	Grinding machine

## 2.9 Types of chemical used in washing plant

No	Chemical name
01	Enzyme
02	Detergent
03	Acetic acid
04	Antistain
05	Bleaching powder
06	Caustic soda
07	Sodium hyposulfite
08	Potassium permanganate

09	Soda ash
10	Sodium bicarbonate
11	Cationic / Nonionic flax softener
12	Salt (sodium chloride)
13	Buffer
14	Hydrogen peroxide
15	Stabilizer
16	Fixing agent
17	Catanizer
18	Optical brightener
19	Resin
20	Sodium metabisulphite
21	Desizing agent

## 2.10 Defects of garments washing

- Over blasting or low blasting
- Over grinding or low grinding
- Poor hand feel

- After wash hole
- Poor brightness
- Bleach spot
- Running shade variation
- Color shade variation
- Spot on garments
- Crease marks
- To high hairiness
- Poor hand feel
- Bottom hem and course edge destroy
- Bad smell due to poor neutralization

# Chapter – 03

## Materials & Methods

### 3.1 Data Collection:

Data Sheet collected from the garments washing section. Some of the data we are collected from washing floor and other data collected from quality production section.

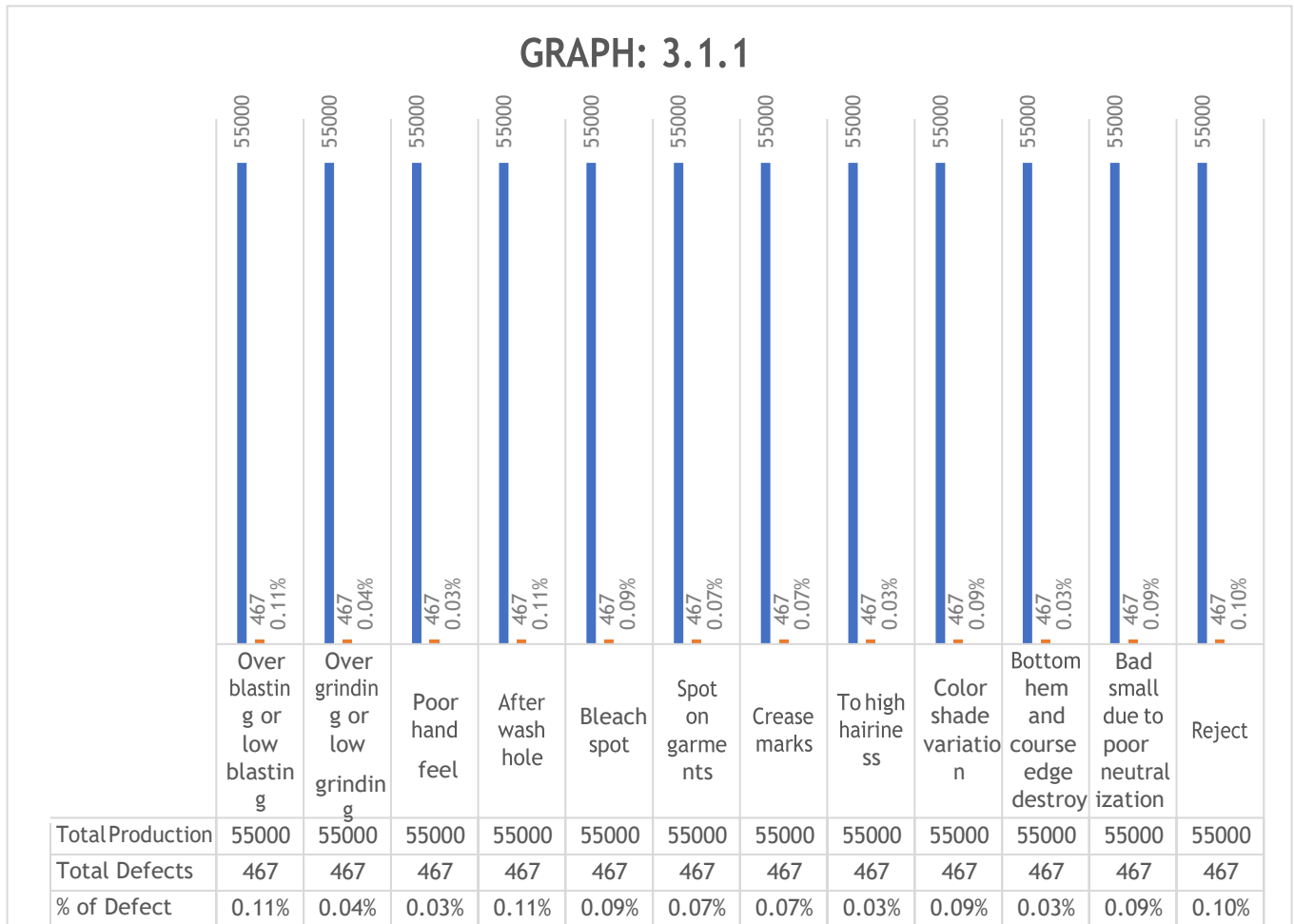
### 3.2 Washing Defects Investigation Table:

The table contain data about garments washing defects for per working day from 06/07/19-03/08/19 total 29 days.

**Table No: 01**

Order No: 418433		Batch No: 6064					Style Types: Basic T-Shirt	
Buyers Name: New Wave		Color : Navy					Production: 55000 pis	
Factory Name: Magpie		Working Day					Duration of Date: 06/07/19-10/07/19	
No	Name of defects	06-07-19	07-07-19	08-07-19	09-07-19	10-07-19	Total	% of Total
01	Over blasting or low blasting	13	12	14	12	11	62	0.112%
02	Over grinding or low grinding	5	6	3	4	6	24	0.043%
03	Poor hand feel	2	3	5	4	3	17	0.03%
04	After wash hole	12	10	12	14	12	60	0.109%
05	Bleach spot	9	10	9	10	9	47	0.085%
06	Spot on garments	5	8	9	8	6	36	0.065%
07	Crease marks	8	11	7	7	5	38	0.069%
08	To high hairiness	2	3	3	2	4	14	0.025%
09	Color shade variation	10	9	8	10	12	49	0.089%
10	Bottom hem and course edge destroy	2	3	2	3	4	14	0.025%
11	Bad small due to poor neutralization	10	12	11	10	9	52	0.094%
12	Reject	12	8	9	10	15	54	0.098%
<b>Total</b>		90	95	92	94	96	<b>467</b>	<b>0.849%</b>

### GRAPH: 3.1.1

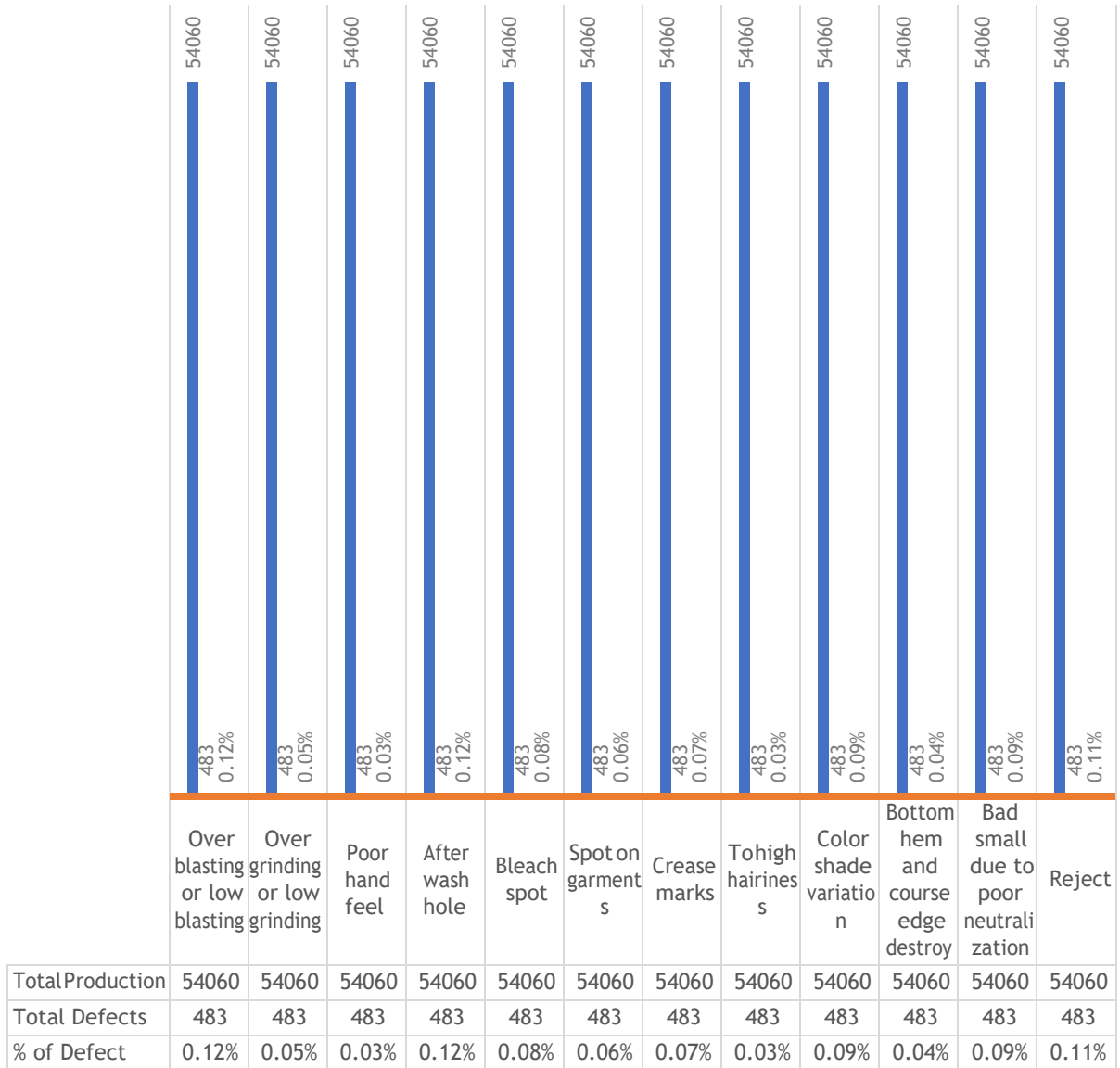




**Table No: 02**

Order No: 421005		Batch No: 6083					Style Types: Basic T-Shirt	
Buyers Name: New Wave		Color : Black					Production: 54060 pis	
Factory Name: Magpie		Working Day					Duration of Date: 11/07/19 to 16/07/19	
No	Name of defects	11-07-19	13-07-19	14-07-19	15-07-19	16-07-19	Total	% of Total
01	Over blasting or low blasting	12	15	14	10	13	64	0.118%
02	Over grinding or low grinding	5	6	5	5	5	26	0.048%
03	Poor hand feel	2	3	6	3	3	17	0.031%
04	After wash hole	10	12	14	14	14	64	0.118%
05	Bleach spot	8	10	10	10	5	43	0.079%
06	Spot on garments	5	7	8	8	6	34	0.062%
07	Crease marks	9	12	6	7	4	38	0.070%
08	To high hairiness	3	3	4	4	4	18	0.033%
09	Color shade variation	12	9	9	11	10	51	0.092%
10	Bottom hem and course edge destroy	4	4	4	5	4	21	0.038%
11	Bad small due to poor neutralization	12	10	12	9	7	50	0.092%
12	Reject	10	13	8	15	11	57	0.105%
<b>Total</b>		92	104	100	101	86	<b>483</b>	<b>0.893%</b>

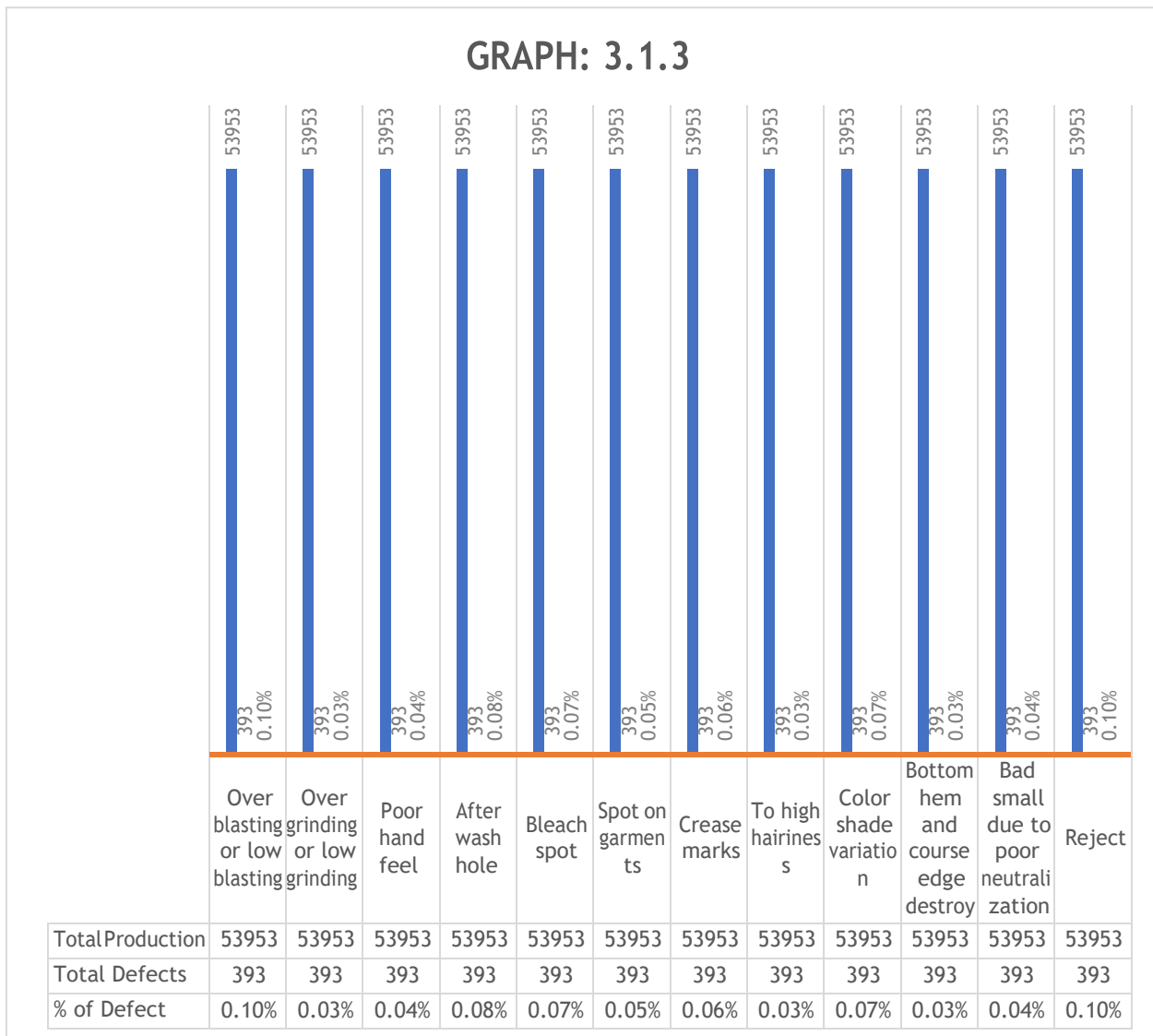
### GRAPH: 3.1.2



**Table No: 03**

Order No: 418878		Batch No: 6124					Style Types: Basic T-Shirt	
Buyers Name: New Wave		Color : White					Production: 53953 pis	
Factory Name: Magpie		Working Day					Duration of Date: 17/07/19 to 22/07/19	
No	Name of defects	17-07-19	18-07-19	20-07-19	21-07-19	22-07-19	Total	% of Total
01	Over blasting or low blasting	15	10	8	7	8	48	0.088%
02	Over grinding or low grinding	3	5	2	2	5	17	0.031%
03	Poor hand feel	2	5	5	5	4	21	0.038%
04	After wash hole	8	9	7	10	8	42	0.076%
05	Bleach spot	9	7	6	8	6	36	0.065%
06	Spot on garments	4	6	5	7	5	27	0.049%
07	Crease marks	6	9	6	6	6	33	0.06%
08	To high hairiness	2	4	4	3	5	18	0.032%
09	Color shade variation	8	6	6	11	8	39	0.07%
10	Bottom hem and course edge destroy	2	4	3	4	3	16	0.029%
11	Bad small due to poor neutralization	7	10	8	12	7	44	0.04%
12	Reject	9	12	7	14	10	52	0.096%
<b>Total</b>		75	87	67	89	75	<b>393</b>	<b>0.662%</b>

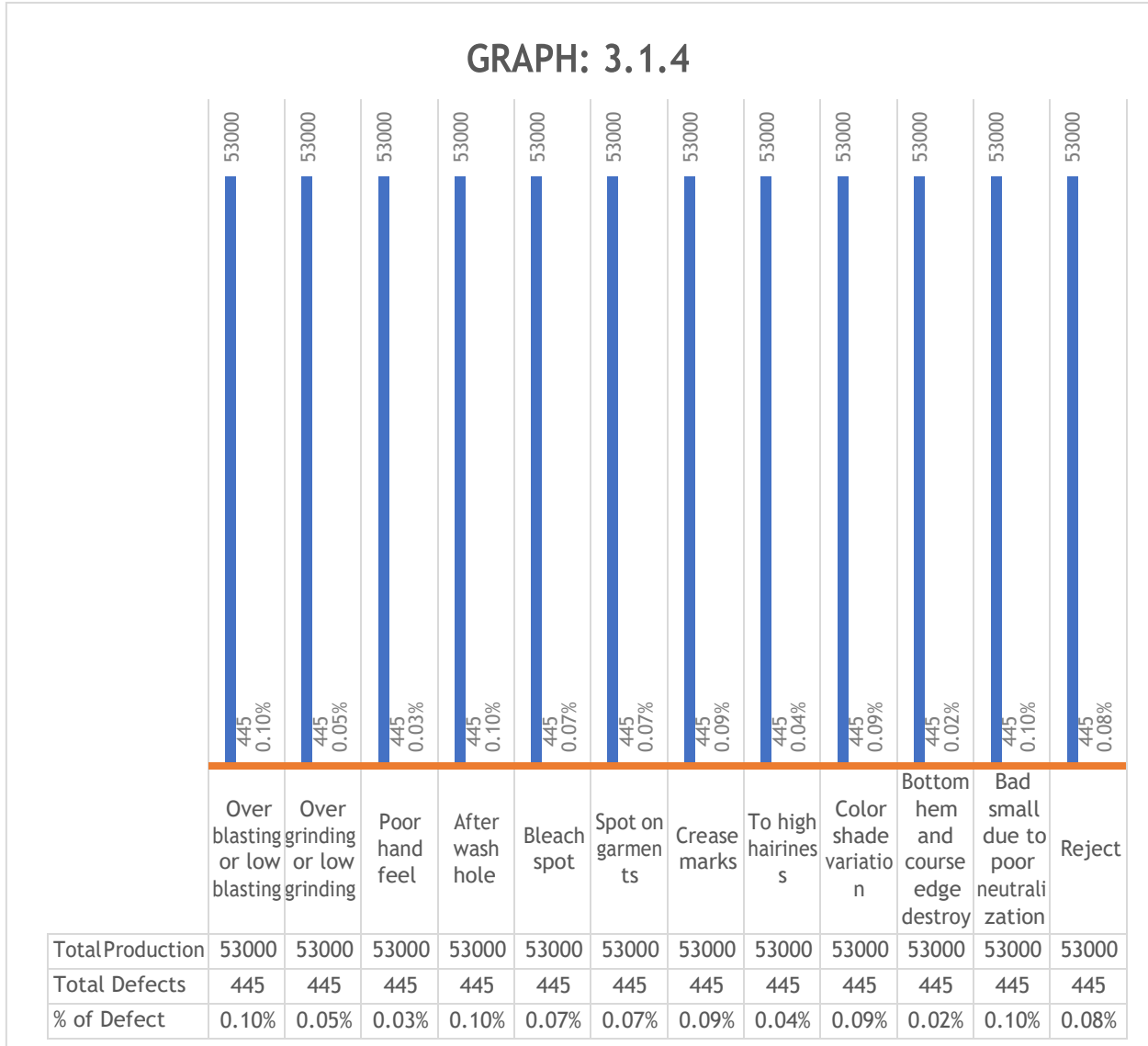
### GRAPH: 3.1.3



**Table No: 04**

Order No: 17001570		Batch No: 5880					Style Types: Basic T-Shirt	
Buyers Name: Hiraki		Color : White					Production: 53000 pis	
Factory Name: Magpie		Working Day					Duration of Date: 23/07/19 to 28/07/19	
No	Name of defects	23-07-19	24-07-19	25-07-19	27-07-19	28-07-19	Total	% of Total
01	Over blasting or low blasting	8	9	11	10	14	52	0.098%
02	Over grinding or low grinding	5	5	4	7	4	25	0.047%
03	Poor hand feel	4	4	3	3	2	16	0.03%
04	After wash hole	13	8	11	12	9	53	0.1%
05	Bleach spot	8	9	7	9	8	41	0.07%
06	Spot on garments	7	10	6	10	5	38	0.071%
07	Crease marks	10	10	12	7	8	47	0.088%
08	To high hairiness	5	4	4	5	3	21	0.039%
09	Color shade variation	8	8	9	7	14	46	0.086%
10	Bottom hem and course edge destroy	2	2	4	3	2	13	0.024%
11	Bad small due to poor neutralization	12	9	13	8	9	51	0.096%
12	Reject	8	9	8	7	10	42	0.079%
<b>Total</b>		90	87	92	88	88	<b>445</b>	<b>0.839%</b>

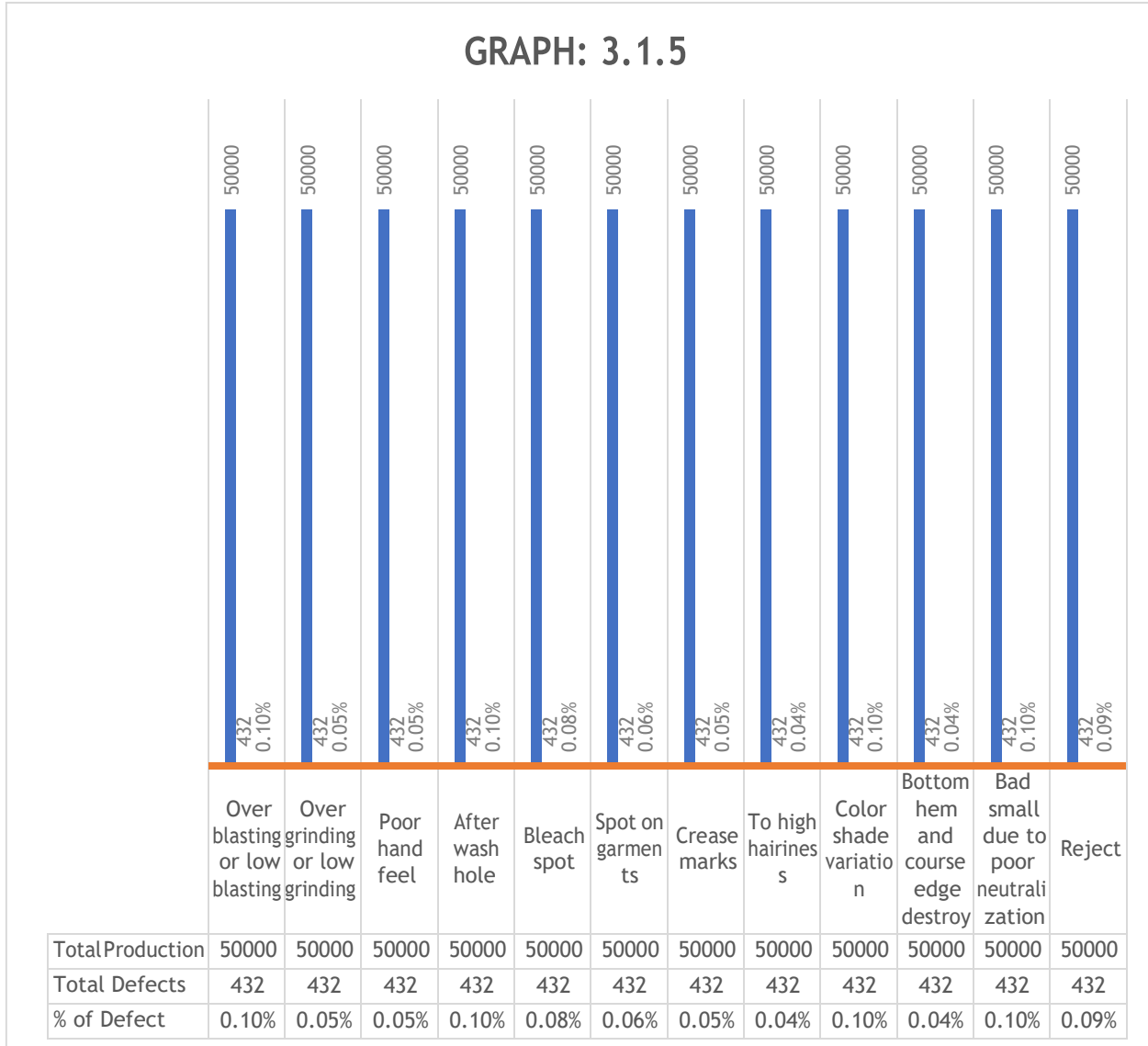
### GRAPH: 3.1.4



**Table No: 05**

Order No: 84403		Batch No: 6037					Style Types: Basic T-Shirt	
Buyers Name:CEPROVET		Color : Royal					Production: 50000 pis	
Factory Name: Magpie		Working Day					Duration of Date: 29/07/19 to 03/08/19	
No	Name of defects	29-07-19	30-07-19	31-07-19	01-08-19	03-08-19	Total	% of Total
01	Over blasting or low blasting	10	8	12	10	9	49	0.098%
02	Over grinding or low grinding	7	5	3	3	5	23	0.046%
03	Poor hand feel	5	4	5	5	5	24	0.048%
04	After wash hole	12	11	10	9	9	51	0.102%
05	Bleach spot	7	7	8	12	7	41	0.082%
06	Spot on garments	6	7	7	5	5	30	0.06%
07	Crease marks	6	5	5	5	3	24	0.048%
08	To high hairiness	3	3	6	4	6	22	0.044%
09	Color shade variation	8	9	10	13	12	52	0.104%
10	Bottom hem and course edge destroy	2	3	4	5	5	19	0.038%
11	Bad small due to poor neutralization	12	9	8	8	13	50	0.1%
12	Reject	9	8	12	10	8	47	0.094%
<b>Total</b>		87	79	90	89	87	<b>432</b>	<b>0.864%</b>

### GRAPH: 3.1.5





**Table NO: 06**

<b>Date</b>	<b>Production</b>	<b>Defect</b>	<b>Reject</b>
06/07/19-10/07/19	55000	467	54
11/07/19-16/07/19	54060	483	57
17/07/19-22/07/19	53953	393	52
23/07/19- 28/07/19	53000	445	42
29/07/19-03/08/19	50000	432	47
<b>Total</b>	<b>266013</b>	<b>2220</b>	<b>252</b>

**Table No: 07**

<b>No:</b>	<b>Defects Name</b>	<b>Number of defects</b>	<b>Defects %</b>
01	Over blasting or low blasting	275	0.103%
02	Over grinding or low grinding	115	0.043%
03	Poor hand feel	95	0.036%
04	After wash hole	270	0.101%
05	Bleach spot	208	0.078%
06	Spot on garments	165	0.062%
07	Crease marks	184	0.069%
08	To high hairiness	93	0.034%
09	Color shade variation	237	0.089%
10	Bottom hem and course edge destroy	83	0.031%
11	Bad small due to poor neutralization	247	0.092%
12	Reject	252	0.094%

# Chapter- 04

## Result & Discussion

### 4.1 Result

Total production = 266013 pieces

Total washing defects = 2220 pieces

Total reject = 252 pieces

Defects percentage = 0.834 %

Reject Percentage = 0.094%

### 4.2 Discussion

Investigation and data collected for 29 working day from 06/07/19 to 03/08/19. Total inspection of garments 266013 pieces where 2220 pieces of defects and rejected are 252 pieces.

### 4.3 Major defects and its remedies

#### ❖ Over blasting or low blasting:

Each garments have certain limit of washing time and temperature. When its Crossing washing limit time and temperature is considered as over washing or when Washing time and temperature is low then it's considered low blasting. That is one kind of washing defect.

#### Causes:

- Due to crossing washing limit time and temperature
- Due to less washing time and low temperature

#### Remedies:

- Properly washing

- Maintain wash limit time and temperature

❖ **Over grinding or low grinding:**

When the grinding is improper and more over then it's called over grinding

When the grinding is improper and low then it's called low grinding.

**Causes:**

- Due to over grinding /low grinding
- Due to improper grinding
- Unskillful worker

**Remedies:**

- Required skillful worker
- Need proper grinding

❖ **Poor hand feel:**

If you find rough hand feels after washing of garments then that considered as a poor hand feel defects of garments washing. When the garments are improper hand sanding, more or less hand sanding than its occurs

**Causes:**

- Improper hand sanding
- Less or more hand sanding

**Remedies:**

- Properly hand sanding
- Need skillful operator

**❖ After wash whole:**

After washing whole is one kind of washing defect that appears after washing because of irregularity is linked to warp threads sticking out as a consequence of washing and drying processes and insufficient finishing of the fabric during the production section

**Causes:**

- Due to irregular link to warp thread
- Insufficient finishing material use
- Due to improper finishing.

**Remedies:**

- Need to Regular link of warp thread
- Sufficient finishing material use
- Need proper finishing the fabric

**❖ Poor brightness:**

When the brightness is less on the garments or fabric know as poor brightness.

**Causes:**

- Due to more wash.
- More wash temperature.

- More rubbing.

### **Remedies:**

- Carefully washing on buyer requirement.
- Maintain the washing time and temperature.

### ❖ **Bleach spot:**

Due to bleach wash creating spot in the fabric or garments that know as bleach spot.

### **Causes:**

Sometimes bleach chemical is drop on the garments for less carefully and create sopt on the garments.

### **Remedies:**

Carefully mixed the chemical and handing.

### ❖ **Color shade variation**

When differences types of shade in a lot and its show up clearly in the garments manufactured from such fabric. Called shade variation

### **Causes:**

- Shade variation can be as a result of mixing of the, fabrics of two different lots.
- Shade variation is also caused, by the variation in the process parameters i.e. Time, Temperature & Speed etc. from one fabric roll, to the other.

- Shade variation can appear to be, in fabrics with GSM variation, caused due to the uneven stretching, unequal fabric overfeed % etc.

**Remedies:**

- Ensure that the grey fabric used for one shade is knitted from the same lot of the yarn.
- Ensure that the same process parameters (Width, Overfeed, Temperature & Machine Speed etc.) are used for each roll of a dye lot.

**❖ Spot on garments:**

When creating a spot in washing is called washing spot defect.

**Causes:**

Due to dust or improper oil or greasing of machine.

**Remedies:**

Properly oil and grease use in machine and free from dust.

**❖ Crease marks:**

When dark haphazard broken or continuous lines seen in the knitted fabric is called Crease marks

**Causes:**

- Damp fabric moving at high speed in twisted form, in the Hydro extractor (Centrifuge)

**Remedies:**

- When the Scouring & the Dyeing process run need to use anti Crease.
- The use of anti-Crease, swells the Cellulose & prevents the formation of Crease mark.

- Spread the fabric in loose & open form & not in the rope form, in the Hydro Extractor.

❖ **High hairiness:**

Due to reprocessed, or tumble dried in the knitted fabric surface appears on excess hairiness

**Causes:**

- Due to the contact with rough surfaces create Abrasion
- For tumbling action, Excessive surface hairiness caused, due to the abrasive tumbling action
- Fabric friction in the Tumble Dryer, due to friction in the tumble dryer
- Rough Dyeing process & abrasive machine surfaces (Soft Flow Machine tubes, Tumble Dryer drum etc.)

**Remedies:**

- Using of Tumble Dryer avoid
- Need to Control shrinkage by maximum fabric relaxation & over feed in the processing.
- Fabric contact points regularly inspect on all the machines, for any kind of rough & sharp surface.
- Stop repeated reprocessing
- Use anti pilling chemical treatments

❖ **Bottom hem and course edge destroy:**

Broken ends appear as equidistant prominent horizontal lines along the width of the fabric tube when a yarn breaks or is exhausted.

**Causes:**

- Yarn Tension high
- Due to yarn exhausted on the Cones.

**Remedies:**

- All feeders need to ensure correct yarn tension
- All the feeders are working properly Ensure by the Yarn detectors
- Need to skilled & alert machine operator on the knitting machine.

**❖ Bad small due to poor neutralization:**

If improper neutralization or poor neutralization after wash then its appears bad small.

**Causes:**

- Due to Improper or poor neutralization

**Remedies:**

- Properly neutralize the chemical after wash.



# Chapter- 05

## 5. Conclusion

In the fashionable age washing is very important part at the present world in textile sector. The demand of knit wash garments increasing day by day. We are so lucky we got the chance to work with this topic by doing this project. we have learn lots about washing sector. In this project we discussed about wash defect on Knit Garments and there remedies. We also Investigation the washing defect presentence per shift. By doing this task we learn how to determine the washing defect on knit garments. We understand the value of washing in textile sector. Over all it was great experience to work on Washing.

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